University of Gdańsk

Subject card

Subject name and code	The evolutionary foundations of biodiversity, PG_00198112						
Field of study	Natural Resources Conservation						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2027/2028			
Education level	Bachelor's studies		Subject group	Obligatory subject group in the field of study Subject group related to scientific research in the field of study			
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	2		Language of instruction	Polish			
Semester of study	4		ECTS credits	1.0			
Learning profile	academic		Assessment form	credit			
Conducting unit	Department of Evolutionary Genetics and Biosystematics -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Tadeusz Namiotko				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours	Self-study	SUM	
	Number of study hours	15		3.0	7.0	25	
Subject objectives	To introduce students to the basic evolutionary mechanisms responsible for biodiversity.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OZPL3_W02] The graduate possesses advanced knowledge and understanding of the mechanisms governing the flow of genetic information, its regulation, the principles of inheritance, and the origins of variation in organisms	The graduate explains the evolutionary mechanisms underlying adaptive change and species diversity.	[SW4] test/exam - oral or written
[OZPL3_U08] The graduate is able to use the scientific language typical of the biological sciences in discussions with specialists	In a discussion, the graduate is able to defend his arguments using the scientific language typical of the biological sciences.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report
[OZPL3_K05] The graduate is ready to understand the need to improve their own competences, update their knowledge and improve their skills	The graduate understands the need to improve his/her own competences and updates his/her knowledge and improves own skills.	[SK1] oral statement/conversation/ discussion
[OZPL3_W04] The graduate possesses advanced knowledge and understanding of the characteristics, systematics, and evolution of selected groups of organisms, as well as the basic concepts and mechanisms of evolution	The graduates presents the basic concepts and hypotheses explaining the reasons for the variation of reproduction and behavioural modes in animals using selected examples.	[SW4] test/exam - oral or written
[OZPL3_U03] The graduate is able to search for and use available sources of biological information, including electronic sources, and critically analyse them	The graduate independently searches for and uses available sources of information on evolutionary biology and biodiversity, including electronic sources, and critically analyse them.	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work
[OZPL3_W05] The graduate understands the principles and mechanisms of life at the population, biocenosis, and ecosystem levels, as well as the temporal and spatial factors that influence biodiversity.	The graduate describes the temporal drivers of the evolution of biodiversity and key changes in the history of life on Earth.	[SW4] test/exam - oral or written
[OZPL3_U07] The graduate is able to draw correct conclusions on the basis of analysis and synthesis of data from various sources	The graduate correctly interprets and draws conclusions on the basis of analysis and synthesis of data from different sources.	[SU1] oral statement/conversation/ discussion
[OZPL3_K01] The graduate is ready to recognise the limitations in his/her own knowledge and understands the need for continuous learning and development	The graduate knows the limitations of his/her own knowledge and understands the need for continuous learning and development and is open to new ideas.	[SK3] text preparation/written work

Subject contents

The concept of natural selection, genetic drift and sexual selection. Natural selection as a factor responsible for adaptive change. Evolution of quantitative traits. Concepts of species. Adaptive radiations, evolutionary trends and rates of evolutionary change. Evolution of biodiversity, mass extinctions. Selected topics on the major transitions in evolution, key periods in the history of life on Earth and the origin of some higher taxa.

Prerequisites and co-requisites

Essential knowledge of the basics of general and population genetics and useful knowledge of plant and animal systematics and evolution and general ecology.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
on the basis of partial marks for student activities (ability to critically analyse a source text and to use this knowledge in discussion, in solving written tasks and in a multimedia presentation)	51.0%	100.0%

Recommended reading

Basic literature	Futuyma D.J., Kirkpatrick M. 2017. Evolution. Oxford Univ. Press. articles on evolutionary biology (e.g. from current and archive issues of Scientific American and from electronic sources)
Supplementary literature	articles on evolutionary biology (e.g. from current and archive issues of Scientific American and from electronic sources)
eResources addresses	

Example issues/ example questions/ tasks being completed

Work placement

Not applicable

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